CLMPTO 09/13/04 JW

Cancel Claims 1-13

Amend Claim 22

14. (Previously Presented) A method of establishing a communication link for inverse multiplexing digital data from a source node to a destination node over a connection including a plurality of transmission links comprising:

verifying the connectivity of the links of the connection using inverse multiplexing control cells, wherein the inverse multiplexing control cells contain test patterns;

initiating the connection by transmitting from the source node one or more inverse multiplexing control cells containing information defining a round robin order in which a series of ATM data cells are to be transmitted over the connection; and

receiving at the source node one or more inverse multiplexing control cells containing information indicating that the destination node is ready to receive ATM data cells in the round robin order over the connection.

15. (Previously Presented) The method of claim 14, wherein the connection includes N transmission links, N being a positive integer, and the verifying step further includes:

verifying at least P links before the connection is initiated, P being a positive integer from 1 to N.

16.   (Previously Presented) A method of inverse multiplexing digital data from a source node to a destination node over a connection including a plurality of transmission links, the data including a series of ATM data cells, comprising:

verifying the connectivity of the links of the connection using inverse multiplexing control cells, wherein the inverse multiplexing control cells contain test patterns;

initiating the connection between the source node and the destination node by transmitting from the source node one or more inverse multiplexing control cells containing information defining a round robin order in which the series of ATM data cells are to be transmitted over the connection;

receiving at the source node one or more inverse multiplexing control cells containing information indicating that the destination node is ready to receive ATM data cells in the round robin order over the connection; and

transmitting ATM data cells to the destination node in the round robin order.

17.   (Previously Presented) The method of claim 16, wherein the connection includes N transmission links, N being a positive integer, and the verifying step further includes:

verifying at least P links before the connection is initiated, P being a positive integer from 1 to N.

18.   (Previously Presented) A method of inverse multiplexing digital data to be transmitted from a source node to a destination node using a plurality of communication links, comprising the steps of:

verifying the connectivity of the links over which the data is to be transmitted using inverse multiplexing control cells, wherein the inverse multiplexing control cells contain test patterns;

transmitting from the source node to the destination node one or more inverse multiplexing control cells including information identifying a specific order in which a series of ATM data cells are to be transmitted over the plurality of communication links;

transmitting from the destination node to the source node one or more inverse multiplexing control cells including information indicating that the destination node is ready to receive ATM data cells in the specific order; and

transmitting from the source node to the destination node the ATM data cells in the specific order.

19.   (Previously Presented) The method of claim 18, wherein the connection includes N transmission links, N being a positive integer, and verifying step further includes:

verifying at least P links before the connection is initiated, P being a positive integer from 1 to N.

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20.   (Previously Presented) A method at a source node of inverse multiplexing digital data to be transmitted from the source node to a destination node using a plurality of communication links comprising:

verifying the connectivity of the links over which the data is to be transmitted using inverse multiplexing control cells, wherein the inverse multiplexing control cells contain test patterns;

transmitting from the source node to the destination node one or more inverse multiplexing control cells including information identifying an order in which a series of ATM data cells are to be transmitted over the plurality of communication links;

receiving at the source node, one or more inverse multiplexing control cells transmitted from the destination node, wherein the one or more inverse multiplexing control cells include information indicating that the destination node is ready to receive ATM data cells in the specified order; and

transmitting from the source node to the destination node the ATM data cells in the specific order.

21.   (Previously Presented) The method of claim 20, wherein the plurality of communication links include N transmission links, N being a positive integer, and the verifying step further includes:

verifying at least P links before the connection is initiated, P being a positive integer from 1 to N.

22.   (Currently Amended) A method, for use at a destination node, of receiving inverse multiplexed digital data transmitted from a source node using a plurality of communication links, comprising:

verifying the connectivity of the links over which the data is to be transmitted using inverse multiplexing control cells, wherein the inverse multiplexing control cells contain test patterns;

receiving from the source node, one or more inverse multiplexing control cells including information identifying an order in which a series of ATM data cells are to be transmitted over the plurality of communication links;

transmitting one or more one or more inverse multiplexing control cells including information indicating that the destination node is ready to receive ATM data cells in the order, and

receiving the ATM data cells transmitted from the source node in the order.

23.   (Previously Presented) The method of claim 22, wherein the plurality of communication links include N transmission links, N being a positive integer, and the verifying step further includes:

verifying at least P links before the connection is initiated, P being a positive integer from 1 to N.

24. (Previously Presented) A method of inverse multiplexing digital data from a source node to a destination node over a connection including a plurality of transmission links, the data containing a series of ATM data cells, comprising:

at a connection start-up, using inverse multiplexing control cells for verifying the connectivity of the links of the connection, wherein the inverse multiplexing control cells contain test patterns;

the source node sending to the destination node one or more inverse multiplexing control cells including information informing the destination node of a round robin order in which th series of ATM data cells are to be transmitted over the connection;

the destination node sending one or more inverse multiplexing control cells including information indicating that the destination node is ready to receive ATM data cells in the round robin order from the plurality of transmission links; and

the source node sending the series of ATM data cells to the destination node in the round robin order.

25. (Previously Presented) The method of claim 24, wherein the connection includes N transmission links, N being a positive integer, and the verifying step further includes:

verifying at least P links before the connection is initiated, P being a positive integer from 1 to N.

26. (Previously Presented) A method of inverse multiplexing digital data over a connection including a plurality of transmission links, the data containing a series of ATM data cells, comprising:

verifying the connectivity of the links of the connection, using inverse multiplexing control cells, wherein the inverse multiplexing control cells contain test patterns;

sending to a destination node one or more inverse multiplexing control cells indicating a specific round robin order in which the series of ATM data cells are to be transmitted over the connection;

receiving from the destination node one or more inverse multiplexing control cells including information indicating that the destination node is ready to receive ATM data cells; and

sending the series of ATM data cells to the destination node in the specific round robin order.

27. (Previously Presented) The method of claim 26, wherein the connection includes N transmission links, N being a positive integer, and the verifying step further includes:

verifying at least P links before the connection is initiated, P being a positive integer from 1 to N.

28.   (Previously Presented) A method of inverse multiplexing digital data over a connection including a plurality of transmission links, the data containing a series of ATM data cells, comprising

verifying the connectivity of the links of the connection, using inverse multiplexing control cells, wherein the inverse multiplexing control cells contain test patterns;

receiving at a destination node from a source node, one or more inverse multiplexing control cells indicating a specific round robin order in which the series of ATM data cells are to be transmitted over the connection;

transmitting from the destination node to the source node one or more inverse multiplexing control cells including information indicating that the destination node is ready to receive ATM data cells; and

receiving the series of ATM data cells at the destination node in the specific round robin order.

29.   (Previously Presented) The method of claim 28, wherein the connection includes N transmission links, N being a positive integer, and the verifying step further includes:

verifying at least P links before the connection is initiated, P being a positive integer from 1 to N.

30.   (Previously Presented) A method of inverse multiplexing digital data from a first node to a second node over a connection consisting of a plurality of transmission links, the data containing a series of ATM data cells, comprising:

verifying the connectivity of the links of the connection, using inverse multiplexing control cells, wherein the inverse multiplexing control cells contain test patterns;

whenever the connection is to be reconfigured, the first node sending to the second node one or more inverse multiplexing control cells containing information indicating a specific round robin order in which the series of ATM data cells are to be transmitted over the connection;

receiving at the first node from the second node, inverse multiplexing control cells containing information indicating that the second node is ready to receive ATM data cells in the specific round robin order from the plurality of transmission links; and

sending each ATM data cell in the series of ATM data cells from the first node to the second node in the specific round robin order.

31.   (Previously Presented) The method of claim 30, wherein the plurality of communication links include N transmission links, N being a positive integer, and the verifying step further includes:

verifying at least P links before the connection is initiated, P being a positive integer from 1 to N.

32.   (Previously Presented) A method of inverse multiplexing digital data from a first node to a second node over a connection consisting of a plurality of transmission links, the data containing a series of ATM data cells, comprising:

verifying the connectivity of the links of the connection, using inverse multiplexing control cells, wherein the inverse multiplexing control cells contain test patterns;

whenever the connection is to be reconfigured, the second node receiving from the first node one or more inverse multiplexing control cells containing information indicating a specific round robin order in which the series of ATM data cells are to be transmitted over the connection;

sending from the second node to the first node, inverse multiplexing control cells containing information indicating that the second node is ready to receive ATM data cells in the specific round robin order from the plurality of transmission links; and

receiving at the second node each ATM data cell in the series of ATM data cells from the first node in the specific round robin order.

33.   (Previously Presented) The method of claim 32, wherein the plurality of communication links includes N transmission links, N being a positive integer, and the verifying step further includes:

verifying at least P links before the connection is initiated, P being a positive integer from 1 to N.

34.   (Previously Presented) A node in an ATM communications system for inverse multiplexing digital data from a source node to a destination node over a connection including a plurality of transmission links, comprising:

a message control device for using inverse multiplexing control cells, for verifying the connectivity of the links of the connection, wherein the inverse multiplexing control cells contain test patterns;

a transmitting device for transmitting from the source node one or more inverse multiplexing control cells containing information defining a round robin order in which a series of ATM data cells are to be transmitted over the connection; and

a receiving device for receiving at the source node, one or more inverse multiplexing control cells containing information indicating that the destination node is ready to receive ATM data cells in the round robin order from the plurality of transmission links.

35.   (Previously Presented) The node of claim 34, wherein the connection includes N transmission links, N being a positive integer, and the message control device verifies at least P links before the transmitting device transmits the one or more cells, wherein P being a positive integer from 1 to N.

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36. (Previously Presented) A node in an ATM communications system for inverse multiplexing digital data from a source node to a destination node over a connection including a plurality of transmission links, the data including a series of ATM data cells, comprising:

a message control device for using inverse multiplexing control cells for verifying the connectivity of the links of the connection, wherein the inverse multiplexing control cells contain test patterns;

a transmitting device that transmits from the source node one or more inverse multiplexing control cells containing information defining a round robin order in which a series of ATM data cells are to be transmitted over the connection;

a receiving device for receiving at the source node, one or more inverse multiplexing control cells containing information indicating that the destination node is ready to receive ATM data cells in the round robin order from the plurality of transmission links; and

a data cell transmitting device for transmitting ATM data cells to the destination node in the round robin order.

37. (Previously Presented) The node of claim 36, wherein the connection includes N transmission links, N being a positive integer, and the message control device verifies at least P links before the transmitting device transmits the one or more cells, wherein P being a positive integer from 1 to N.

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36.   (Previously Presented) A node in an ATM communications system for inverse multiplexing digital data from a source node to a destination node over a connection including a plurality of transmission links, the data including a series of ATM data cells, comprising:

a message control device for using inverse multiplexing control cells for verifying the connectivity of the links of the connection, wherein the inverse multiplexing control cells contain test patterns;

a transmitting device that transmits from the source node one or more inverse multiplexing control cells containing information defining a round robin order in which a series of ATM data cells are to be transmitted over the connection;

a receiving device for receiving at the source node, one or more inverse multiplexing control cells containing information indicating that the destination node is ready to receive ATM data cells in the round robin order from the plurality of transmission links; and

a data cell transmitting device for transmitting ATM data cells to the destination node in the round robin order.

37.   (Previously Presented) The node of claim 36, wherein the connection includes N transmission links, N being a positive integer, and the message control device verifies at least P links before the transmitting device transmits the one or more cells, wherein P being a positive integer from 1 to N.

39.   (Previously Presented) The node of claim 38, wherein the plurality of communication links include N transmission links, N being a positive integer, and the message control device verifies at least P links before the transmitting device transmits the one or more cells, wherein P being a positive integer from 1 to N.

40.   (Previously Presented) A node in an ATM communications system for inverse multiplexing digital data to be transmitted from the source node to a destination node using a plurality of communication links, comprising:

a message control device for using inverse multiplexing control cells for verifying the connectivity of the links over which the data is to be transmitted, wherein the inverse multiplexing control cells contain test patterns;

a transmitting device for transmitting from the source node to the destination node, one or more inverse multiplexing control cells including information identifying a specific order in which a series of ATM data cells are to be transmitted over the plurality of communication links;

a receiving device for receiving at the source node, one or more inverse multiplexing control cells transmitted from the destination node, wherein the one or more inverse multiplexing control cells include information indicating that the destination node is ready to receive ATM data cells in the specific order; and

a data cell transmitting device for transmitting from the source node to the destination node the ATM data cells in the specific order.

41.   (Previously Presented) The node of claim 40, wherein the plurality of communication links include N transmission links, N being a positive integer, and the message control device verifies at least P links before the transmitting device transmits the one or more cells, wherein P being a positive integer from 1 to N.

42. (Previously Presented) A node in an ATM communications system for receiving inverse multiplexed digital data transmitted from a source node to the destination node using a plurality of communication links, comprising:

a message control device that transmits to the source node one or more inverse multiplexing control cells having information used to verify the connectivity of the links over which the data is to be transmitted, wherein the one or more inverse multiplexing control cells contain test patterns;

a receiving device that receives at the destination node one or more inverse multiplexing control cells transmitted from the source node, wherein the one or more inverse multiplexing control cells include information identifying a specific order in which a series of ATM data cells are to be transmitted over the plurality of communication links,

a transmitting device that transmits from the destination node to the source node, one or more inverse multiplexing control cells including information indicating that the destination node is ready to receive ATM data cells in the specific order; and

a data cell receiving device that receives at the destination node the ATM data cells transmitted from the source node in the specific order.

43. (Previously Presented) The node of claim 42, wherein the plurality of communication links include N transmission links, N being a positive integer, and the message control device verifies at least P links before the transmitting device transmits the one or more cells, wherein P being a positive integer from 1 to N.

44.   (Previously Presented) A node in an ATM communications system for inverse multiplexing digital data from a source node to a destination node over a connection including a plurality of transmission links, the data containing a series of ATM data cells, comprising:

a message control device that transmits to the destination node one or more inverse multiplexing control cells having information for verifying the connectivity of the links over which the data is to be transmitted, wherein the one or more inverse multiplexing control cells contain test patterns;

a transmitting device for sending from the source node to the destination node, at a connection start-up, one or more inverse multiplexing control cells informing the destination node of a specific round robin order in which the series of ATM data cells are to be transmitted over the connection;

a transmitting device for sending one or more inverse multiplexing control cells including information indicating that the destination node is ready to receive ATM data cells in the specific round robin order; and

a data cell transmitting device for sending the series of ATM data cells over the connection to the destination node in the specific round robin order.

45.   (Previously Presented) The node of claim 44, wherein the connection includes N transmission links, N being a positive integer, and the message control device verifies at least P links before the transmitting device transmits the one or more cells, wherein P being a positive integer from 1 to N.

46.   A node in an ATM communications system for inverse multiplexing digital data over a connection including a plurality of transmission links, the data containing a series of ATM data cells, comprising:

a message control device that transmits to a destination node one or more inverse multiplexing control cells having information for verifying the connectivity of the links over which the data is to be transmitted, wherein the one or more inverse multiplexing control cells contain test patterns;

a transmitting device for sending to a destination node one or more inverse multiplexing control cells including information indicating a specific round robin order in which the series of ATM data cells are to be transmitted over the connection;

a receiving device for receiving from the destination node one or more inverse multiplexing control cells including information indicating that the destination node is ready to receive ATM data cells; and

a data cell transmitting device for sending the series of ATM data cells to the destination node in the specific round robin order.

47.   (Previously Presented) The node of claim 46, wherein the plurality of communication links include N transmission links, N being a positive integer, and the message control device verifies at least P links before the transmitting device transmits the one or more cells, wherein P being a positive integer from 1 to N.

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48.   (Previously Presented) A node in an ATM communication system for inverse multiplexing digital data over a connection including a plurality of transmission links, the data containing a series of ATM data cells, comprising:

a message control device for receiving at a destination node one or more inverse multiplexing control cells having information for verifying the connectivity of the links over which the data is to be transmitted, wherein the one or more inverse multiplexing control cells contain test patterns;

a receiving device for receiving at a destination node from a source node one or more inverse multiplexing control cells including information indicating a specific round robin order in which the series of ATM data cells are to be transmitted over the connection;

a transmitting device for transmitting from the destination node one or more inverse multiplexing control cells including information indicating that the destination node is ready to receive ATM data cells; and

a data cell receiving device for receiving the series of ATM data cells at the destination node in the specific round robin order.

49.   (Previously Presented) The node of claim 48, wherein the connection includes N transmission links, N being a positive integer, and the message control device verifies at least P links before the transmitting device transmits the one or more cells, wherein P being a positive integer from 1 to N.

50.	(Previously Presented) A node in an ATM communication system for inverse multiplexing digital data to another node over a connection consisting of a plurality of transmission links, the data containing a series of ATM data cells, comprising:

a message control device that transmits to the another node one or more inverse multiplexing control cells having information for verifying the connectivity of the links over which the data is to be transmitted, wherein the one or more inverse multiplexing control cells contain test patterns;

a transmitting device for sending to the another node, whenever the connection is to be reconfigured, one or more inverse multiplexing control cells containing information indicating a specific round robin order in which the series of ATM data cells are to be transmitted over the connection;

a receiving device for receiving from the another node, one or more inverse multiplexing control cells containing information indicating that the node is ready to receive ATM data cells in the specific round robin order from the plurality of transmission links; and

a data cell transmitting device for sending each ATM data cell in the series of ATM data cells to the another node in the specific round robin order.

51.	(Previously Presented) The node of claim 50, wherein the connection includes N transmission links, N being a positive integer, and the message control device verifies at least P links before the transmitting device transmits the one or more cells, wherein P being a positive integer from 1 to N.

52.   (Previously Presented) A node in an ATM communication system for inverse multiplexing digital data to another node over a connection consisting of a plurality of transmission links, the data containing a series of ATM data cells, comprising:

a message control device that receives at the another node one or more inverse multiplexing control cells having information for verifying the connectivity of the links over which the data is to be transmitted, wherein the one or more inverse multiplexing control cells contain test patterns;

a receiving device for receiving at the another node, whenever the connection is to be reconfigured, one or more inverse multiplexing control cells containing information indicating a specific round robin order in which the series of ATM data cells are to be transmitted over the connection;

a transmitting device for sending from the another node, one or more inverse multiplexing control cells containing information indicating that the another node is ready to receive ATM data cells in the specific round robin order from the plurality of transmission links; and

a receiving device for receiving at the another node each ATM data cell in the series of ATM data cells in the specific round robin order.

53.   (Previously Presented) The node of claim 52, wherein the connection includes N transmission links, N being a positive integer, and the message control device verifies at least P links before the transmitting device transmits the one or more cells, wherein P being a positive integer from 1 to N.

54.   (Previously Presented) A node in an ATM communications system for inverse multiplexing digital data to be transmitted from a source node to a destination node using a plurality of communication links, comprising:

means for using inverse multiplexing control cells for verifying the connectivity of the links over which the data is to be transmitted, wherein the inverse multiplexing control cells contain test patterns;

means for transmitting from the source node to the destination node one or more inverse multiplexing control cells including information identifying a specific order in which a series of ATM data cells are to be transmitted over the plurality of communication links;

means for transmitting from the destination node to the source node, one or more inverse multiplexing control cells including information indicating that the destination node is ready to receive ATM data cells in the specific order; and

means for transmitting from the source node to the destination node the ATM data cells in the specific order.

55.   (Previously Presented) The node of claim 54, wherein the plurality of communication links include N transmission links, N being a positive integer, and the message control device verifies at least P links before the transmitting device transmits the one or more cells, wherein P being a positive integer from 1 to N.

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56.   (Previously Presented) A system for inverse multiplexing digital data from one node to
another node over a connection, the data containing a series of ATM data cells, the system
comprising:

a plurality of transmission links in communication with the one node;

a message control device for using inverse multiplexing control cells for verifying the
connectivity of the links of the connection, wherein the inverse multiplexing control cells contain
test patterns;

a transmitting device for transmitting from the one node one or more inverse multiplexing
control cells containing information defining a round robin order in which a series of ATM data cells
are to be transmitted over the connection; and

a receiving device for receiving at the one node, one or more inverse multiplexing control
cells containing information indicating that the another node is ready to receive ATM data cells in
the round robin order from the plurality of transmission links.

57.   The system of claim 56, wherein the connection includes N transmission links, N being a
positive integer, and the message control device verifies at least P links before the transmitting
device transmits the one or more cells, wherein P being a positive integer from 1 to N.

58.   (Previously Presented) A method of inverse multiplexing digital data from a source node to a destination node over a connection consisting of a plurality of transmission links, said data containing a series of ATM data cells, comprising steps of:

at a connection start up, verifying the connectivity of the links of the connection, using inverse multiplexing control cells, wherein the inverse multiplexing control cells contain test patterns;

sending from the source node to the destination node, inverse multiplexing control cells informing the latter of a specific round robin order in which the series of ATM data cells are to be transmitted over the connection;

the destination node sending inverse multiplexing control cells whose receive ready field is set to indicate that the destination node is ready to receive ATM data cells in said specific round robin order from the plurality of transmission links; and

the source node sending each ATM data cell in said series of ATM data cells to the destination node in said specific round robin order.

59.   (Previously Presented) The system of claim 58, wherein the connection includes N transmission links, N being a positive integer, and the message control device verifies at least P links before the transmitting device transmits the one or more cells, wherein P being a positive integer from 1 to N.